

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number
WO 2005/009876 A2

(51) International Patent Classification⁷:

B65G

(21) International Application Number:

PCT/US2004/023122

(22) International Filing Date: 16 July 2004 (16.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/488,353

17 July 2003 (17.07.2003) US

(71) Applicants (for all designated States except US): **SAUDI ARABIAN OIL COMPANY** [SA/SA]; R-3296, Administration Building, Dhahran 31311 (SA). **ARAMCO SERVICES COMPANY** [US/US]; 9009 West Loop South, Houston, TX 77096 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HALL, Ian** [GB/AE]; Apt. 203 Al Dar Bldg., Bur Dubai, Dubai (AE). **SCOTT, Thomas, J.** [US/SA]; 909 9th Street, Dhahran 31311 (SA).

(74) Agent: **CATANZARO, Joseph, J.**; Abelman, Frayne & Schwab, 150 East 42nd Street, New York, NY 10017-5612 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

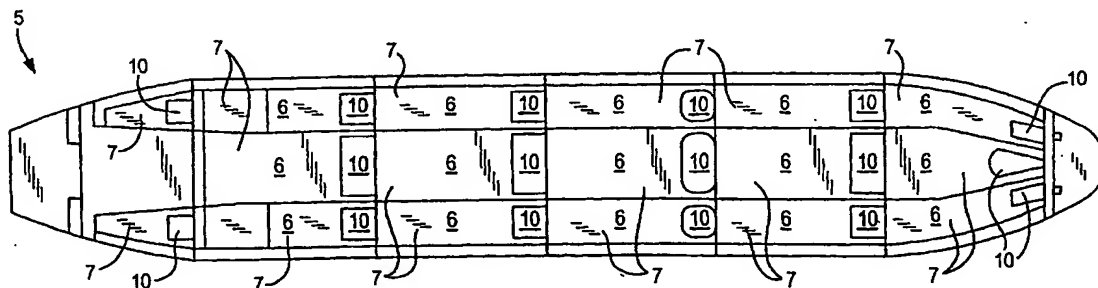
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **GAS EXPANSION TRUNK FOR MARINE VESSELS**



(57) Abstract: A liquid cargo carrying maritime vessel including a plurality of liquid cargo carrying tanks and a plurality of gas expansion trunks wherein each gas expansion trunk is above, associated with, and in fluid communication with a respective tank therebelow, via slotted apertures in the deck. Each gas expansion trunk is fixedly positioned on a portion of a deck of the vessel above the associated tank and in fluid/tight relationship with the deck over a periphery of the trunk which encloses the totality of slotted apertures in the deck. Depending on the attributes of the ship, the expansion trunk is preferably located directly above the tank and at the highest point available of the tank and as far forward on the tank as possible. Alternatively, and depending upon obstructive constraints and vessel conditions, the trunk may be placed in other locations such as aftmost on the tank or inbetween. Gas expansion trunks are suitable for being retrofitted onto existing ships or integrated into the configuration of new ships.

WO 2005/009876 A2